Decision Support System (DSS) Extracts
Patch ECX*3.0*161

Deployment, Installation, Back-Out, and Rollback Guide

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Revision History

Date	Version	Description	Author
10/04/2016	1.1	Updated Section 4.5 based on VIP Release Team review	TeamSMS/Leidos
10/03/2016	1.0	Initial document creation	TeamSMS/Leidos

Artifact Rationale

This document describes the Deployment, Installation, Back-out, and Rollback Plan for new products going into the VA Enterprise. The plan includes information about system support, issue tracking, escalation processes, and roles and responsibilities involved in all those activities. Its purpose is to provide clients, stakeholders, and support personnel with a smooth transition to the new product or software, and should be structured appropriately, to reflect particulars of these procedures at a single or at multiple locations.

Per the Veteran-focused Integrated Process (VIP) Guide, the Deployment, Installation, Back-out, and Rollback Plan is required to be completed prior to Critical Decision Point #2 (CD #2), with the expectation that it will be updated throughout the lifecycle of the project for each build, as needed.

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1 Introduction

The entry ECX*3.0*161 in the National Patch Module (NPM) on Forum provides detailed instructions for the installation of this patch. A copy of these instructions is distributed to sites in the PackMan e-mail message along with the software. This current document details the criteria for determining if a back-out is necessary, the authority for making that decision, the order in which installed components will be backed out, the risks and criteria for a rollback, and authority for acceptance or rejection of the risks.

1.1 Purpose

The purpose of this plan is to provide a single, common document that describes how, when, where, and to whom the DSS FY17 patch (ECX*3.0*161 v3) will be deployed and installed, as well as how it is to be backed out and rolled back, if necessary. The plan also identifies resources, communications plan, and rollout schedule. Specific instructions for installation, back-out, and rollback are included in this document.

1.2 Dependencies

There are no new dependencies beyond those covered under separate topic below that are being introduced in this version of the DSS Extracts application.

1.3 Constraints

DSS FY17 has the following constraints:

- Data is available from other packages
- AITC is ready and available to accept extract documents

2 Deployment

Site deployment is divided into three distinct phases:

1. Pre-Installation/Initial Site Setup

2. Pre-Production/Test Environment Installation

3. Production Environment Installation

Section 3 details the required steps each IOC site must perform, in order to successfully install ECX*3.0*161.

2.1 Timeline

The September FY16 extracts are scheduled to run overnight for one night, beginning on October 11, 2016. The Patch ECX*3.0*161 is scheduled to be installed and deployed in the IOC site production environments beginning on October 12, 2016. The patch is scheduled to remain in the IOC production environment for three days. During this time, the IRMs will verify the installation to ensure there are no errors.

2.2 Site Readiness Assessment

Before installing DSS Extracts, please verify with the local DSS Site Manager that extraction and transmission of FY16 data have been completed. Revisions to data dictionaries and routines made during this installation will make it impossible to perform any further FY16 data extracts.

2.2.1 Deployment Topology (Targeted Architecture)

ECX*3.0*161, a patch to the VistA DSS Extracts package, is installable on a fully patched M(UMPS) VistA system and operates on top of the VistA environment provided by the VistA infrastructure packages. The latter provide utilities which communicate with the underlying operating system and hardware, thereby providing DSS Extracts independence from variations in hardware and operating system.

2.2.2 IOC Site Information (Locations, Deployment Recipients)

DSS FY17 Patch ECX*3.0*161 v3 will be deployed to five IOC test sites of varying size. Table 1 describes the physical IOC sites and their associated resources.

Table 1: IOC Site Information

Full Evaluation Site Name	List 1) IT POC (installer) and 2) Subject Matter Expert (SME) POC (tester) & Title	System Size
VA Boston Health Care System (Boston)	1) Kim Ramalho, Lead Information Technology (IT) Specialist 2) Dave Osborne, VISN 1 DSS Operations Manager	Integrated Large
VA North Texas Health Care System (Dallas)	1) DeAnn Holder, IT Specialist 2) Charla Whisenhunt, DSS Program Analyst	Integrated Large
VA Central Alabama Health Care System (Tuskegee)	1) Horace Warren, IT Specialist 2) Anna Harper, Program Analyst	Integrated Large
Central Arkansas Veterans Healthcare System (Little Rock)	1) Robin McBryde, IT Analyst 2) Ray Doss, DSS Site Manager / Program Specialist	Large
VA Salt Lake City Health Care System	1) Tami Bowker, IT Analyst 2) Morris J Casarez, VISN 19 Management Analyst Officer	Large

2.2.3 Site Preparation

No additional site preparation activities are required. DSS FY17 will run under current site configuration.

2.3 Resources

This section describes the relevant hardware, software, facilities, and documentation for DSS FY17 Patch ECX*3.0*161 v3 deployment.

2.3.1 Hardware

Not applicable. No new hardware or other resources are required.

2.3.2 Software

Table 2 describes the minimum version for VistA infrastructure software applications for installation and normal operation.

Table 2: External Package Minimum Versions Required

Software Product Name	Acronym	Minimum Version Required
Admission Discharge Transfer	ADT	5.3
Bar Code Medication Administration	BCMA	3.0
DSS Extracts	DSS	3.0
Event Capture	EC	2.0
FileMan	FM	22.0
Health Level Seven	HL7	1.6
Kernel	XU	8.0
Laboratory	LR	5.2
Lab: Blood Bank	LBB	5.2
MailMan	XM	8.0
Mental Health	MH	5.01
Order Entry/Results Reporting	OE/RR	3.0
Patient Care Encounter	PCE	1.0
Pharmacy: Data Management	PDM	1.0
Pharmacy: Inpatient Medications	PSJ	5.0
Pharmacy: National Drug File	NDF	4.0
Pharmacy: Outpatient Pharmacy	PSO	7.0
Prosthetics	PRO	3.0
Quality: Audiology and Speech Pathology Audit & Review	QUASAR	3.0
Radiology	RAD	5.0
Registration	DG	5.3
Scheduling	SD	5.3
Surgery	SR	3.0

2.3.3 Communications

Communications with test sites continue to be through email, Patch Tracking Message in FORUM and Outlook and one-on-one telephone calls to individuals involved in testing.

2.3.3.1 Deployment/Installation/Back-Out Checklist

Table 3 lists the activities for DSS FY17 deployment, installation and back-out.

Table 3: Deployment/Installation/Back-Out Checklist

Activity	Day	Time	Individual who completed task
Deploy	10/12/16	Site dependent according to local policy	IRM
Install	10/12/16	Site dependent according to local policy	IRM
Back-Out	Only performed as needed	Only performed as needed	N/A

3 Installation

3.1 Pre-installation and System Requirements

ECX*3.0*161, a patch to the VistA DSS Extracts package, is installable on a fully patched M(UMPS) VistA system and operates on top of the VistA environment provided by the VistA infrastructure packages. The latter provide utilities which communicate with the underlying operating system and hardware, thereby providing DSS Extracts independence from variations in hardware and operating system.

Before installing DSS Extracts, please verify with the local DSS Site Manager that extraction and transmission of FY16 data have been completed. Revisions to data dictionaries and routines made during this installation will make it impossible to perform any further FY16 data extracts.

Any extract process that may have been tasked to run should be unscheduled before beginning the installation.

3.2 Platform Installation and Preparation

No new hardware or other resources are required.

3.1 Download and Extract Files

ECX*3.0*161 v3 is provided to IOC sites as a KIDS build via FORUM. Refer to the ECX*3.0*161 patch documentation in the NPM.

3.2 Database Creation

The patch is applied to an existing M(UMPS) VistA database.

3.3 Installation Scripts

There are no installation scripts needed for software installation. Refer to the ECX*3.0*161 patch documentation in the NPM.

3.4 Cron Scripts

There are no Cron scripts associated with DSS or its installation.

3.5 Access Requirements and Skills Needed for the Installation

Account Access Requirements for Installation:

- Access: Programmer @ sign to ensure all programmer access at the sites.
- Mailman access

Skill level requirements for installation:

- Knowledge of roll and scroll navigation and commands to support install
- Knowledge and ability to verify checksums
- Knowledge and ability to back up global
- Knowledge and ability to check error traps
- Knowledge and ability to troubleshoot installation issues

Instructions on how to perform these installation functions are included in this installation guide as well as in the formal NPM Patch Description that is sent to site/regional personnel prior to the installation.

3.6 Installation Procedure

The subsections below describe the steps for installing ECX*3.0*161 v3.

3.6.1 Load Transport Global

Choose the PackMan message containing the ECX*3.0*161 v3 patch and invoke the INSTALL/CHECK MESSAGE PackMan option.

3.6.2 Start Up KIDS

Step 1. Start up the Kernel Installation and Distribution System Menu **[XPD MAIN]**:

```
Edits and Distribution ...
Utilities ...
Installation ...
```

Step 2. Select Kernel Installation & Distribution System Option: **INS**tallation

```
Load a Distribution
Print Transport Global
Compare Transport Global to Current System
Verify Checksums in Transport Global
Install Package(s)
Restart Install of Package(s)
Unload a Distribution
Backup a Transport Global
```

3.6.3 Select Installation Option

When prompted for the INSTALL NAME, enter ECX*3.0*161

The following steps are optional, but are recommended:

Step 1. Backup a Transport Global
This option creates a backup message of any routines exported with this patch. It will not backup any other changes such as data definitions or templates.

Step 2. Compare Transport Global to Current System
This option allows the installer to view all changes that will be made when this patch is installed. It compares all components of this patch (routines, data definitions, templates, etc.).

Step 3. Verify Checksums in Transport Global
This option allows the installer to ensure the integrity of the routines that are in the transport global.

3.6.4 Install Package(s)

The following steps start the installation of this KIDS patch:

Step 1. Choose the Install Package(s) option to start the patch install. Enter **ECX*3.0*161** when prompted for a build name.

Step 2. When prompted 'Want KIDS to Rebuild Menu Trees Upon Completion of Install? NO//' respond **YES**.

Step 3. When prompted 'Want KIDS to INHIBIT LOGONs during the install? NO//' respond **NO**.

Step 4. When prompted 'Want to DISABLE Scheduled Options, Menu Options, and Protocols? NO//' respond **YES**.

Step 5. When prompted 'Enter options you wish to mark as 'Out Of Order', enter the following option:

Extract Manager's Options [ECXMGR]

Step 6. When prompted 'Enter protocols you wish to mark as 'Out Of Order':' press **<Enter>**.

Step 7. If prompted 'Delay Install (Minutes): (0-60): 0//', answer "0" (unless otherwise indicated).

3.7 Installation Verification Procedure

The second line of each of these routines now looks like:

```
;;3.0;DSS EXTRACTS;**[Patch List]**;Dec 22, 1997;Build 6
```

The checksums below are new checksums, and can be checked with **CHECK1^XTSUMBLD.**

```
Routine Name: ECX3P161
    Before:       n/a   After: B14081447  **161**
Routine Name: ECXADM
    Before: B61935470   After: B61277683  **1,4,11,8,13,24,33,39,46,71,
                                           84,92,107,105,120,127,132,136,
                                           144,149,154,161**
Routine Name: ECXBCM
    Before: B97333580   After: B97386412  **107,127,132,136,143,144,148,
                                           149,154,160,161**
Routine Name: ECXEC
    Before: B89043397   After: B87611184  **11,8,13,24,27,33,39,46,49,
                                           71,89,92,105,120,127,132,136,
                                           144,149,154,161**
Routine Name: ECXLABN
```

```
    Before: B52461125   After: B52461125  **1,11,8,13,28,24,30,31,32,33,
                                           39,42,46,70,71,80,92,107,105,
                                           112,127,132,144,149,154,161**
Routine Name: ECXLABR
    Before: B24269511   After: B24269511  **8,24,33,37,39,46,71,80,107,
                                           105,112,127,144,154,161**
Routine Name: ECXLBB1
    Before: B28281573   After: B28196749  **105,102,120,127,144,156,161**
Routine Name: ECXMOV
    Before: B30514137   After: B30514137  **8,24,33,39,41,42,46,65,84,
                                           107,105,128,127,161**
Routine Name: ECXOPRX1
    Before: B10575789   After: B10575789  **92,107,105,120,127,144,149,
                                           154,161**
Routine Name: ECXPHAA
    Before: B49254831   After: B55266587  **92,142,149,161**
Routine Name: ECXPIVD2
    Before:  B9904800   After:  B9904800  **105,120,127,144,149,161**
Routine Name: ECXPRO
    Before: B48529101   After: B48529101  **9,13,15,21,24,33,39,46,71,
                                           92,105,120,127,132,136,144,149,
                                           154,161**
Routine Name: ECXPROCT
    Before: B31812713   After: B46942913  **71,100,144,154,161**
Routine Name: ECXPROEE
    Before:       n/a   After: B16595376  **161**
Routine Name: ECXPROEL
    Before:       n/a   After:  B7107575  **161**
Routine Name: ECXQSR
    Before: B71545700   After: B69811253  **11,8,13,26,24,34,33,35,39,
                                           43,46,49,64,71,84,92,106,105,
                                           120,124,127,132,136,144,154,
                                           161**
Routine Name: ECXQSR1
    Before: B18769480   After: B18769480  **105,120,127,132,136,144,149,
                                           154,161**
Routine Name: ECXRAD
    Before: B48026824   After: B48026824  **11,8,13,16,24,33,39,46,71,
                                           84,92,105,120,127,136,144,149,
                                           153,154,161**
Routine Name: ECXSCLD
    Before:B159034107   After:B174524393  **2,8,24,30,71,80,105,112,120,
                                           126,132,136,142,144,149,154,
                                           161**
Routine Name: ECXSCLD1
    Before: B69216890   After: B70146278  **132,136,144,149,154,161**
Routine Name: ECXSCXN
    Before: B90426087   After: B88294315  **24,27,29,30,31,32,33,39,46,
                                           49,52,71,84,92,107,105,120,124,
                                           127,132,136,144,149,156,154,
                                           161**
Routine Name: ECXSURG
    Before: B79357790   After:B100852388  **1,11,8,13,25,24,33,39,41,42,
                                           46,50,71,84,92,99,105,112,128,
                                           127,132,144,149,154,161**
Routine Name: ECXSURG1
    Before: B22604193   After: B22422974  **105,112,120,127,132,144,149,161**
Routine Name: ECXTRAC
    Before: B97271442   After: B97186887  **9,8,14,24,30,33,49,84,105,144,161**
Routine Name: ECXTRT
    Before: B58392796   After: B58738441  **1,8,17,24,33,35,39,46,49,84,
                                           107,105,127,161**
Routine Name: ECXTRT2
```

```
    Before:  B4576670   After:  B4576670  **105,127,161**
Routine Name: ECXUD
    Before: B91677386   After: B91677386  **10,8,24,33,39,46,49,71,84,
                                           92,107,105,120,127,144,149,154,
                                           161**
Routine Name: ECXUEC
    Before: B54850131   After: B59479609  **120,127,148,149,161**
Routine Name: ECXUPRO
    Before: B32109188   After: B34904169  **49,111,144,148,149,154,161**
Routine Name: ECXUPRO1
    Before: B10090164   After: B12140173  **49,111,132,137,144,149,154,161**
Routine Name: ECXUSUR
    Before: B35704491   After: B37839317  **49,71,84,93,105,148,149,161**
Routine Name: ECXUSUR1
    Before: B13707274   After: B15980382  **49,71,105,111,128,148,161**
Routine Name: ECXUTLA
    Before: B73834306   After: B78105168  **8,14,112,154,161**

Routine list of preceding patches: 160
```

3.8 System Configuration

No system configuration changes are required.

3.9 Database Tuning

No reconfiguration of the VistA database, memory allocation or other resources is necessary for DSS ECX*3.0*161 v3.

4 Back-Out Procedure

Site Information Resource Managers (IRMs) perform backups on routines prior to patch installation. If for any reason a need arises, IRMs will back out the patch and revert to the previous backup point to restore their respective environments. Any changes that need to be reapplied to the database will be manually applied.

4.1 Back-Out Strategy

In the event that the ECX*3.0*161 package needs to be backed out, the development team will assist the site with removing the VistA routines as needed.

4.2 Back-Out Considerations

Back-out considerations would include the following:

- Health of site systems
- Ability to recover to a stable environment
- Minimal disruption to a site
- Minimize issues within the VistA host

4.2.1 Load Testing

Not applicable. The installation process of back-out patch ECX*3.0*161 v3, which would be executed at a normal, rather than raised job priority, would be expected to have minimal effect on total system

performance. To minimize potential impact on users, implementation of a back-out can be queued to run during hours of reduced user activity. Subsequent to the reversion, the performance demands on the system would be unchanged.

4.2.2 User Acceptance Testing

It is expected that the restoration of the pre-ECX*3.0*161 v3 version of routines could be confirmed by IT Support quickly by using utility CHECK1^XTSUMBLD, which returns the checksum or routine comparison utilities from VA Kernel without any need of User Acceptance Testing.

4.3 Back-Out Criteria

A back-out of the software should only be done in response to a severe system impairment, and there is no other option available.

TeamSMS/Leidos will analyze the issue and related system functionality impairment. Based upon the severity of the condition, a determination will be made if a back-out of the software is required.

4.4 Back-Out Risks

Risks for a back-out would include:

- Further corruption of system.
- Inability to completely remove all software code from system.
- Loss of system functionality while back-out is in progress.
- Loss of data; some records may never be recovered.

4.5 Authority for Back-Out

With input from the project team and/or field site personnel, authority for DSS extracts software back-out would be a joint decision from the following people:

- Chris Minardi, Health Portfolio Director
- Mike Leigh, Business Owner/Managerial Cost Accounting Office
- Mary Caulfield, Health Product Support

4.6 Back-Out Procedure

Site Information Resource Managers (IRMs) perform backups on routines prior to patch installation. If for any reason a need arises, IRMs will back out the patch and revert to the previous backup point to restore their respective environments. Any changes that need to be reapplied to the database will be manually applied. It may be necessary for the developer to be given access to the site to assist with these procedures.

4.7 Back-Out Verification Procedure

It is expected that the restoration of the pre-ECX*3.0*161 v3 version of routines could be confirmed by IT Support quickly by using utility CHECK1^XTSUMBLD, which returns the checksum or routine comparison utilities from VA Kernel. Manually check database changes to verify that file are in their previous state.

5 Rollback Procedure

Site Information Resource Managers (IRMs) perform backups on routines prior to patch installation. If for any reason a need arises, IRMs will back out the patch and revert to the previous backup point to restore their respective environments. Any changes that need to be reapplied to the database will be manually applied.

5.1 Rollback Considerations

The rollback of software to a previous version would be required in the event of a severe loss of functionality and the inability to resolve the issue.

The strategy is to:

- Limit access and contain the issue
- Troubleshoot the issue thoroughly
- Discuss available options
- If no other options are available, make the join decision to back-out/rollback the software version to a previous known good working version
- Execute back-out/rollback procedures
- Test thoroughly to ensure correct functionality of system and software
- Turn the system over to the customer

Prior to installing an updated KIDS package, the site/region should have saved a backup of the routines in a mail message using the Backup a Transport Global [XPD BACKUP] menu option (this is done at time of install).

Back-out will be done only with the concurrence and participation of TeamSMS/Leidos and appropriate VA site/regional personnel.

The decision to back-out or rollback software will be a joint decision between TeamSMS/Leidos, VA site/regional personnel and other appropriate VA personnel.

5.2 Rollback Criteria

The following remediation steps address situations in which the application has become non-functional during the normal course of operation.

When issues are reported either directly to TeamSMS, HPS or MCAO, TeamSMS will identify the source of the issue and the component that is affected.

Issues that may cause an impairment of functionality include:

- Errors found in the VistA error trap. These errors can occur due to any number of potential issues at a site.
- Insufficient disk space for data stores. These types of issues generally require that additional disk space is allocated in order to return the application to full health.
- Insufficient disk space for the application components. These issues are related to log files filling up the available space. The remedy is to archive the log files and remove them from the server. A key monitoring activity for the application is ensuring that log files do not fill up the available space.

Based upon the severity of the error condition, a determination will be made on whether or not the issue is temporary and can be resolved within the runtime environment, or if a rollback to a previous version of the system is required.

5.3 Rollback Risks

Risks for a rollback would include:

- Loss of system functionality while rollback is in progress
- Loss of data
- Loss of DSS Extract functionality with rollback to previous version

5.4 Authority for Rollback

Authority for a DSS software back-out would be a joint decision from the following: DSS Leadership (including OI&T, MCAO, Health Product Support (HPS) and VHA) as well as:

- TeamSMS/Leidos (Release Team and Project Management)
- Site/Region personnel

5.5 Rollback Procedure

Site Information Resource Managers (IRMs) perform backups on routines prior to patch installation. If for any reason a need arises, IRMs will back out the patch and revert to the previous backup point to restore their respective environments. Any changes that need to be reapplied to the database will be manually applied. It may be necessary for the developer to be given access to the site to assist with these procedures.

5.6 Rollback Verification Procedure

It is expected that the restoration of the pre-ECX*3.0*161 v3 version of routines could be confirmed by IT Support quickly by using utility CHECK1^XTSUMBLD, which returns the checksum or routine comparison utilities from VA Kernel. Manually check database changes to verify that file are in their previous state.